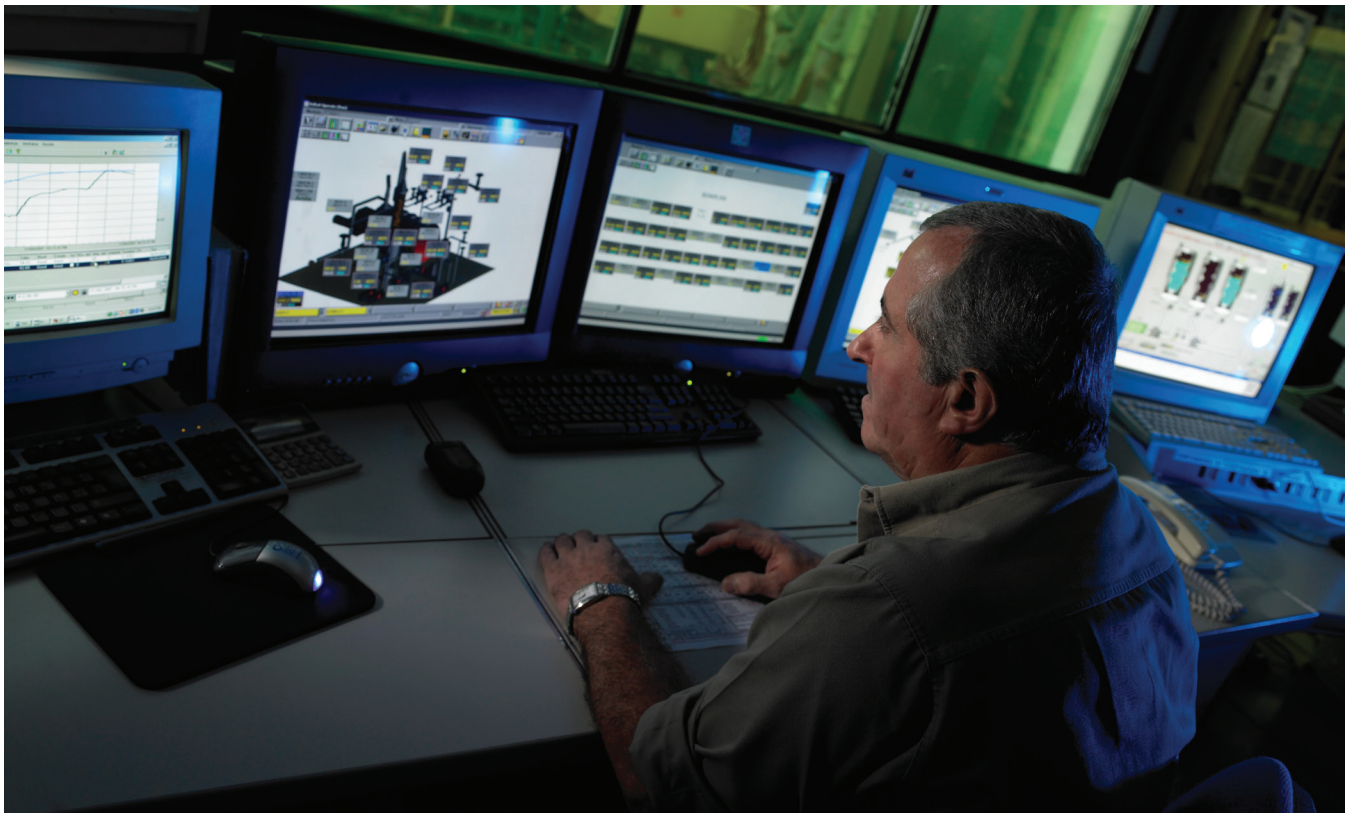
DeltaV™ Security Manual

Implementing Security on the DeltaV Distributed Control System



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1 Introduction

1.1 Purpose

This manual is a guide for process engineers, information technology personnel, operations managers and other plant personnel responsible for developing and maintaining the cyber-security for DeltaV distributed control system.

This manual describes the security features built into DeltaV systems and explains how to harden DeltaV installations against cyber-security threats. This manual supports installation and maintenance of DeltaV software. It includes descriptions of patching, backup and restore activities, and procedures for verifying that security mechanisms for hardening the DeltaV system have been properly installed and configured.

1.2 Organization

The remainder of this introduction provides references to related documents and contains a glossary of security related terminology.

Section 2 describes basic security concepts and provides guidance for working with IT and Emerson Process Management personnel to apply these concepts. It also provides guidance on determining the need for having security policies and procedures for a given installation.

Section 3 describes the as-built security features of DeltaV systems.

Section 4 describes how to patch DeltaV systems.

Section 5 discusses backup and recovery activities of DeltaV systems.

Section 6 describes installation and maintenance from a security perspective.

Finally, the individual topics described in this manual may refer the reader to other DeltaV documentation that contains additional detail.

1.3 Relevant documentation

1.3.1 Background reading

The following whitepapers provide introductory material for understanding digital security:

- Best Practices for DeltaV Cyber Security
- DeltaV Cyber Security
- Emerson Wireless Security - WirelessHART® and Wi-Fi™ Security
- Report: M 2784 – X – 10, Process Control Domain – Security Requirements for Vendors, published by WIB, Second issue, October 2010, version 2.0

Although no system can be made completely free from security risks, risk can be reduced in the following ways:

- Develop a comprehensive security policy for the DeltaV system.
- Follow the guidelines in this manual.
- Provide training for employees.
- Make digital security an ongoing process through continuous reevaluation of security risks and rigorous implementation of security practices that make sense for the system.

1.3.2 DeltaV documentation

The documentation that describes the various aspects of the DeltaV system are listed below.

- *DeltaV Books Online*: the main, online reference for details on DeltaV implementation. It is available on the DeltaV product media and is a free-standing application that can be obtained separately for planning the system implementation.
- *Installing Your DeltaV Distributed Control System* and *Getting Started with Your DeltaV Digital Automation System* manuals: provide information on hardware setup and overviews of the DeltaV system architecture and applications. These manuals are available on paper and in DeltaV Books Online.
- Whitepapers: provide information on a variety of topics. They are typically free-standing documents covering a single topic. Whitepapers provide detailed information to help users better understand product functionality or implementation. They are available from Emerson.
- Product data sheets: specify product capabilities and functionality. They are available from Emerson.
- Knowledge-Based-Articles (KBA): provide up-to-date information on implementing a DeltaV distributed control system. They are available to Foundation Support customers on the secure support site.

1.3.3 Microsoft documentation

DeltaV systems incorporate many of the security features provided by the Microsoft Windows operating system and supporting software elements. For the details of how to configure and operate this software, consult the Microsoft documentation.

1.3.4 3rd party product documentation

DeltaV systems support three levels of integration of 3rd party products: tightly integrated (e.g. Cisco switches), approved for integration (e.g. Symantec Endpoint Protection), and Emerson Process Management Alliance products (e.g. OSI Pi).

For tightly integrated products, documentation is included in *DeltaV Books Online* and in KBAs as appropriate. This documentation includes very specific directions for implementing tightly integrated products to provide the most robust DeltaV system solution. Deviations from this documentation can result in non-supported solutions.